

## CLAIMS

What is claimed is:

1. A computer based system for routing a call in a network, comprising:  
5 a detector for detecting the arrival of said call; and

a handler that functions with said detector, for comparing a service request of said call to information relating to a characteristic of a link, finding a link conforming to said service request, and routing said call via said conforming link.

10 2. The computer based system as recited in Claim 1, further comprising a storage component that functions with said handler, for providing said information.

3. The computer based system as recited in Claim 2, wherein said storage component comprises a database.

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4. The computer based system as recited in Claim 1, wherein said handler comprises:

a comparator that receives said service request from said detector, for performing said comparing; and

20 a routing element that functions with said comparator, for performing said routing.

5. The computer based system as recited in Claim 4, wherein said routing element comprises a route agent.

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6. The computer based system as recited in Claim 5, wherein said routing element further comprises an outgoing call controller.

7. The computer based system as recited in Claim 1, further comprising an advertiser that functions with said handler, for advertising said information.

5 8. The computer based system as recited in Claim 7, wherein said advertising comprises providing said information to a remote node of said network.

9. The computer based system as recited in Claim 1, wherein said information is contained in a Private Network to Network Interface Topology State  
10 Element and wherein said service request is contained in a General Application Transport Information Element.

10. The computer based system as recited in Claim 1, wherein said network comprises a private network to network interface asynchronous transfer  
15 mode network.

11. A computer implemented method for signaling and routing a call in a network, comprising:

detecting arrival of said call;  
20 accessing a service request of said call;  
determining that said service request relates to an attribute of a link of said network;  
seeking a routing path that conforms to said service request;  
selecting said routing path; and  
25 routing said call via said selected routing path.

12. The computer implemented method as recited in Claim 11, wherein said seeking comprises:

accessing information relating to said link;

examining said information; and

5 comparing said information to said service request.

13. The computer implemented method as recited in Claim 11, wherein said routing path comprises a plurality of links.

10 14. The computer implemented method as recited in Claim 13 wherein said routing path spans said network.

15 15. The computer implemented method as recited in Claim 11, wherein said attribute is selected from the group consisting of a capability of said link, a characteristic of a node comprising said link, and a peer group policy.

16. The computer implemented method as recited in Claim 11, wherein said attribute is selected from the group consisting of:

a characteristic relating to type;

20 a characteristic relating to encryption;

a characteristic relating to basing;

a characteristic relating to public nature;

a characteristic relating to quality of service (QoS) capability;

a characteristic relating to said link comprising a virtual trunk; and

25 a color assigned to that route.

17. The computer implemented method as recited in Claim 11, wherein said information comprises a general application transport information element.

18. The computer implemented method as recited in Claim 11, wherein  
5 said network comprises a private network to network interface asynchronous transfer mode network.

19. A computer implemented method for advertising a route for a call in a network according to an attribute of said route, comprising:  
10 accessing information relating to a link comprising said route;  
examining said information;  
determining said attribute from said information; and  
providing data relating to said attribute to a node comprising said network.

15 20. The computer implemented method as recited in Claim 19, wherein said providing comprises:  
generating a statement descriptive of said attribute; and  
sending said statement to said node.

20 21. The computer implemented method as recited in Claim 20, wherein said statement comprises a Private Network to Network Interface Topology State Element.

22. The computer implemented method as recited in Claim 20, wherein  
25 said network comprises a private network to network interface asynchronous transfer mode network.

23. The computer implemented method as recited in Claim 22, wherein said statement comprises a component of a private network to network interface signaling setup message.

5           24. The computer implemented method as recited in Claim 19, wherein said attribute is selected from the group consisting of a capability of said link, a characteristic of a node comprising said link, and a peer group policy.

25. The computer implemented method as recited in Claim 24, wherein  
10 said attribute is selected from the group consisting of:  
a characteristic relating to type;  
a characteristic relating to encryption;  
a characteristic relating to basing;  
a characteristic relating to public nature;  
15 a characteristic relating to quality of service (QoS) capability; and  
a characteristic relating to said link comprising a virtual trunk.

26. The computer implemented method as recited in Claim 19, wherein  
said advertising comprises adding said data to a persistent network topology  
20 database.

27. A computer usable medium having a computer readable program  
code for causing a computer system to implement a method for signaling and routing  
a call in a network, said method comprising:  
25 detecting arrival of said call;  
accessing a service request of said call;

determining that said service request relates to an attribute of a link of said network;

seeking a routing path that conforms to said service request, wherein said seeking comprises:

- 5                   accessing information relating to said link;
- examining said information; and
- comparing said information to said service request;
- selecting said routing path; and
- routing said call via said selected routing path.

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28.    A computer usable medium having a computer readable program code for causing a computer system to implement a method for advertising a route for a call in a network according to an attribute of said route, said method comprising:

- accessing information relating to a capability of a link comprising said route;
- 15               examining said information;
- determining said attribute from said information; and
- providing data relating to said attribute to a node comprising said network,

wherein said providing comprises:

- generating a statement descriptive of said attribute wherein said
- 20               statement comprises a Private Network to Network Interface Topology State Element; and
- sending said statement to said node.

29.    A system for signaling and routing a call in a network, comprising:

- 25               means for detecting arrival of said call;
- means for accessing a service request of said call;

means for determining that said service request relates to an attribute of a link of said network;

means for seeking a routing path that conforms to said service request, wherein said seeking means comprise:

- 5                    means for accessing information relating to said link;
- means for examining said information; and
- means for comparing said information to said service request;
- means for selecting said routing path; and
- means for routing said call via said selected routing path.

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30.     A system for advertising a route for a call in a network according to an attribute of said route, comprising:

- means for accessing information relating to a link comprising said route;
- means for examining said information;
- 15                  means for determining said attribute from said information; and
- means for providing data relating to said attribute to a node comprising said network, wherein said providing means comprise:
  - means for generating a statement descriptive of said attribute; and
  - means for sending said statement to said node.

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31. A computerized apparatus for advertising a route for a call in a network according to an attribute of said route, comprising:

an accessor for accessing information relating to a link comprising said route;

an examiner functioning with said accessor, for examining said information;

5 an attribute determiner functioning with said examiner, for determining said attribute from said information; and

a provider functioning with said attribute determiner, for providing data relating to said attribute to a node comprising said network, said provider comprising:

10 a statement generator for generating a statement descriptive of said attribute; and

a statement sender functioning with said statement generator, for sending said statement to said node.

32. The computerized apparatus as recited in Claim 31, wherein said  
15 statement comprises a Private Network to Network Interface Topology State Element.

33. A computerized apparatus for routing a call in a network, comprising:

a detector for detecting the arrival of said call at a first node of said network;

20 a handler that functions with said detector, for comparing a service request of said call to information relating to a characteristic of a link, finding a link conforming to said service request between said first node and a second node of said network, and routing said call to said second node via said conforming link; and

25 a storage component that functions with said handler, for providing said information.



34. A computer implemented method for signaling and routing a call in a network, comprising:

detecting arrival of said call at a first node of said network;

accessing a service request of said call;

5 determining that said service request relates to an attribute of a link of said network;

seeking a routing path between said first node and a second node of said network that conforms to said service request, said seeking comprising:

accessing information relating to said routing path;

10 examining said information; and

comparing said information to said service request;

selecting said routing path; and

routing said call to said second node via said selected routing path.

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